ISSN 0820-8107

Forestry Canada Forêts Canada

91-05258/

NO. 248

Forestry Canada - Maritimes Region

TECHNICAL NOTE

Forest Pest Conditions in Demonstration Woodlots on PEI 1989-1990

INTRODUCTION

The Forest Insect and Disease Survey regularly monitors and reports on forest insect and disease conditions in the forests of Prince Edward Island. As part of these regular surveys, we routinely make observations in the six demonstration woodlots established by the Prince Edward Island Department of Energy & Forestry in the early 1980s under the Canada - P.E.I. Forest Resource Development Agreement. These woodlots, distributed across the Island (Figure 1), were designed to increase public awareness of Island forests and to provide private woodlot owners with information on forest management (PEI Energy and Forestry, 1985).

An important aspect of forest management is the protection of the forest from damaging agents such as insects, diseases, and fire. In order to protect the forest, we must know what organisms are present and if they are causing significant damage that would warrant protection. This report will summarize the more common forest insects and diseases found during the summers of 1989 and 1990 at each of the demonstration woodlots. With this report we hope to generate an awareness of forest insects and diseases in both the general public and private woodlot owners.

NURSERIES

PLANTATIONS

SILVICULTURE

UTILIZATION

ECONOMICS

TREE IMPROVEMENT

INSECTS AND DISEASES

Forestry Canada - Maritimes Region
P.O. Box 4000, Fredericton, N.B. E3B 5P7
P.O. Box 667, Truro, N.S. B2N 5E5
P.O. Box 190, Charlottetown, P.E.I. C1A 7K2

Cette publication est aussi disponible en français sur demande

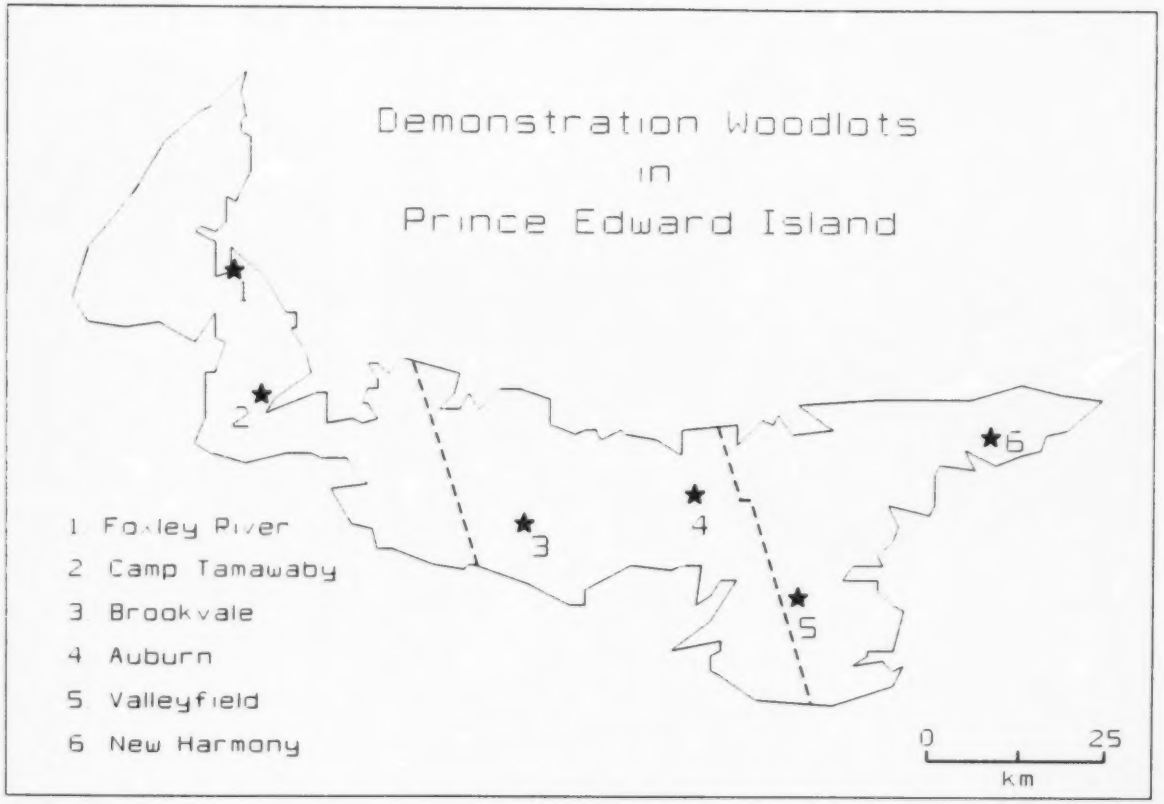
Demonstration Woodlots
in
Prince Edward Island
1 Foxley River
2 Camp Tamawaby
3 Brookvale
4 Auburn
5 Valleyfield
6 New Harmony
0
25
km

Figure 1

Foxley River Demonstration Woodlot, Prince County

The majority of pests were observed on white spruce and larch, the following were most apparent:

Spruce budmoths, which feed under the bud caps of developing shoots, infested significantly fewer white spruce shoots in 1990 (16%) than in 1989 (50%).

Spruce budworm populations, although generally at low population levels in Prince County, caused light defoliation of white spruce foliage.

Larch casebearer, a tiny insect that lives in a small case from which it feeds on larch needles, caused moderate browning throughout the woodlot.

Hemlock looper feeds on a variety of hardwoods and softwoods and can kill balsam fir trees in 1 year if populations are high enough. Numbers have increased since 1989, causing light and trace defoliation of spruce and tamarack trees in the woodlot.

Fall webworm, which builds soft, thick, velvety webs on a wide variety of hardwood trees and shrubs, was common on scattered alder bushes.

Black knot of cherry, a disease that forms a hard black swelling on cherry branches and stems, has infected most chokecherry trees.

Other pests that were present, but currently causing insignificant damage were: **brown larch tubemaker, larch shoot moth, greenheaded spruce sawfly, webspinning sawflies** and **eastern spruce gall adelgid.**

Camp Tamawaby Demonstration Woodlot, Prince County

Most significant damage was apparent on cedar, larch, fir, and spruce by the following pests:

Cedar leafminers caused light and moderate browning of cedar foliage on plantation trees. Repeated leafminer attacks over the years have resulted in branch mortality and thin crowns, and will probably result in tree mortality in the near future.

Larch casebearer, which feeds exclusively on larch foliage, caused severe browning of Japanese larch and moderate browning of native larch.

Eastern larch beetle is a bark beetle that feeds between the bark and wood of larch trees. Populations build up very quickly, killing trees in some cases in 1 year. A few trees are infested and in a state of decline.

Hemlock looper populations were high in the woodlot in 1989 but dropped dramatically, so that only a few larvae were present in 1990.

Spruce budmoths damaged nearly 20% of new shoots on most woodlot white spruce.

Sawyer beetles feed on the bark of living trees and sometimes cause the death of twigs and branches. In 1990, approximately 20% of balsam fir trees were damaged in the woodlot.

Balsam gall midge creates swollen galls on current needles and feeds inside them. Populations are increasing and infested an average of 12% of balsam fir needles.

Other pests that were found, but were causing minimal damage, were: **Spruce budworm** and **blackheaded budworm** on white spruce, **poplar serpentine leafminer**, and a variety of **leafrollers/leaffolders** on trembling aspen.

Brookvale Demonstration Woodlot, Queens County

This woodlot was not without forest pests, however, damage was very limited. Most notable were the following:

Spruce budmoth larvae infested only a few white spruce shoots, compared to 1989 when up to 25% of spruce shoots were infested.

Sawyer beetles damaged 10% of balsam fir twigs on most trees in the woodlot by feeding on the bark of twigs and smaller branches causing foliage on branch tips to turn red.

Witches' broom, a rust that results in abnormal shoot growth, with 'brooms' growing on twigs and branches, was present on many balsam fir trees.

Rabbits, feeding on bark and twigs, damaged nearly 10% of branches on nearly half the white spruce trees; no change from 1989.

Black knot of cherry was present on more than 90% of the pin cherry trees.

Other pests that caused only minor damage were: **eastern spruce gall adelgid, spruce bud midge, balsam twig aphid**, and various leaf **mites** and the **obliquebanded leafroller** on red maple foliage.

Auburn Demonstration Woodlot, Queens County

Several forest pests were observed causing noticeable damage:

Birch casebearer, which lives in a cigar-shaped case reaching as far as it can to feed between the layers of the leaf without leaving its case, infested more than 60% of white birch foliage on most trees.

Hypoxylon canker, a stem and branch canker which eventually encircles

and kills branches and stems, has infected about one in ten trembling aspen.

Black knot of cherry affected about one-quarter of all pin cherry trees.

Spittlebugs insert their stylets in twigs to feed on the host tree's sap and cover themselves with a frothy mass of spittle made up of tiny air bubbles. Spittlebugs were present on 20% of shoots on most white pine trees.

Hemlock looper was present in increasing numbers in 1990, compared to 1989, on a few scattered balsam fir trees.

Spruce budmoths damaged 12% of shoots on 90% of the open-growing white spruce.

Winter drying, the result of winter winds drying out conifer foliage, caused moderate browning on one-quarter of red spruce plantation trees.

Witches' broom, a disease which causes brooms to grow on branches of balsam fir trees, was present on numerous trees throughout the woodlot.

A number of other insects that were conspicuous over the last two years were: **eastern spruce gall adelgid, larch casebearer, uglynest caterpillar** on deciduous shrubs, **white pine weevil, ocellate gall midge** on red maple and sugar maple, and a variety of insects on trembling aspen foliage that included the **lightheaded aspen leafroller, forest tent caterpillar, leaf mites, casebearers** and a **leaffolding sawfly.**

Valleyfield Demonstration Woodlot, Kings County

Although several forest pests were found damaging forest trees, the following three were deemed the most significant:

Spruce budworm populations were high enough to cause moderate defoliation of white spruce in and around the woodlot in 1990, no change from 1989.

Beech bark disease is found on beech trees throughout much of the Maritimes. Trees are in a deteriorating condition and a few trees are dead in the woodlot.

Sugar maple borer is not usually fatal to larger sugar maple trees but causes unsightly scars on the stems and larger branches. Only two trees were affected on the woodlot.

The following pests were present but caused only minor damage: **obliquebanded leafroller** on red maple, **mite piles, leaf blotchminers, leafhoppers** and **maple spindlegall mite** on sugar maple foliage, **black leaf blister**, a foliar disease and **maple bladdergall mite**, both found on red maple.

New Harmony Demonstration Woodlot, Kings County

Several forest insects and diseases were found here, none of which, except perhaps the first three listed, would be considered currently hazardous to tree health:

European pine shoot moth feeds in newly emerging buds of red and Scots pine. This insect infested nearly 20% of new shoots of all plantation red pine.

Spruce budmoths damaged 1/3 of the shoots on about half the white spruce trees, a slight increase from 1989.

Beech scale and **beech bark disease** were present on all beech trees.

Spruce budworm, although common in areas of southern Kings and Queens counties, were present in low numbers at this woodlot and did not cause noticeable defoliation on white spruce trees.

Birch casebearer caused light browning of white birch.

Witches' broom affected 60% of balsam fir trees; some trees having four or five brooms of varying size.

Other pests of minor concern were: **ocellate gall midge** and **mite piles** on red and sugar maple foliage, **maple spindlegall mite** and **maple bladdergall mite** on sugar maple and red maple, respectively, **gouty vein midge** on sugar maple, **leaffolding sawfly** and **leaf and twig blight of aspen** on the leaves and new shoots of trembling aspen, respectively.

Summary

Generally, the damage caused by the above listed pests reflected the status of pest conditions for the entire province for the last 2 years. Spruce budmoths, spruce budworm, and larch casebearer are ranked as pests causing the greatest amount of damage, supported in part by the frequency of occurrence of spruce budmoths at all but one of the demonstration woodlots; the level of damage by spruce budworm for 2 consecutive years at Valleyfield; and the severity of needle-browning by the larch casebearer, particularly at Camp Tamawaby.

Also, to put these pests in perspective relative to the provincial situation, the reader need only review recent FIDS annual reports (Magasi 1989; Magasi, 1990) to fully understand and appreciate the record of damage by these pests.

We will continue to monitor these woodlots and report pest summaries in subsequent reports.

C.M.B. Dobson and A.W. MacKay
Forest Insect and Disease Survey

April 1991

Literature cited:

Magasi, L.P. 1989. Forest pest conditions in the Maritimes in 1989. FC-Maritimes Region Information Report M-X-177.

Magasi, L.P. 1990. Forest pest conditions in the Maritimes in 1990. FC-Maritimes Region Information Report M-X-178.

P.E.I. Department of Energy and Forestry. 1985. Pamphlet series on demonstration woodlots (Foxley River, Camp Tamawaby, Brookvale, Auburn, Valleyfield, New Harmony)